DOCUMENT RESUME

ED 200 175 HE 013 667

AUTHOR Laughlin, J. Stanley
TITLE Student Credit Hours per Full Time Equivalent Faculty Members by Discipline. Data Representing a Set of Rocky Mountain Institutions.
PUB DATE Oct 79
NOTE 14p.; Paper presented at the Annual Meeting of the Rocky Mountain Association for Institutional Research (1979).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *College Credits; College Faculty; *Departments; *Faculty Workload; *Full Time Equivalency; Full Time Faculty; Higher Education; Research; Statistical Analysis; *Student Teacher Ratio; *Teacher Responsibility
IDENTIFIERS *Student Course Load; United States (Rocky Mountain States)

ABSTRACT

Based on a review of the literature on faculty workloads, a ratio of student credit hours per full-time equivalent faculty member is developed at the discipline level. This approach is recommended for use as a departmental loading, not for individual faculty member loading. The procedure involves developing a low point, an average point, and a high point for each ratio by discipline. The department would be expected to work within this interval, which allows the management to work out the ratio desired with departmental personnel, thereby conceptualizing differences due to such factors as the amount of research or other activities one is expected to perform. To illustrate the creation of a mean and interval, 1978 data from Rocky Mountain colleges and universities are used. A statistical table indicates a high, average, and low student credit hour per full-time faculty equivalent for various disciplines. The highs and lows were calculated by using one standard deviation above and below the mean. It is suggested that this information could provide administrators with a ratio and an interval estimate with which to study their own institutions. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED200175

STUDENT CREDIT HOURS PER FULL TIME EQUIVALENT FACULTY MEMBERS BY DISCIPLINE DATA REPRESENTING A SET OF ROCKY MOUNTAIN INSTITUTIONS

Enclosed is a set of data from a sample of Rocky Mountain Higher Education Institutions, giving for each discipline student credit hours per full time equivalent faculty member. Data is for Fall, 1978.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

J. Stanley Laughlin

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Office Of Institutional Research
Idaho State University

J. Stanley Laughlin

October, 1979

HE013667

ABSTRACT

Research on faculty load has indicated a variety of methods to be utilized in computations. The discussion has not abated. Perhaps, there are as many ideas as there are number of people to conceive them. Of the variables such as class size, repeated sections, level of course, and mode of presentation, the subject discipline is really the only variable which research illustrates that it effects faculty load.

Therefore, this paper deals with the development of a ratio of student credit hours per full time faculty member at the discipline level. It is recommended to be utilized as a departmental loading, not individual faculty member loading. The paper suggests that a way to build the loads should be at a discipline level and that an interval be utilized. Utilizing an interval of one standard deviation added and substracted from a mean is suggested for development of an interval. The creation of this mean and interval is done from historical data of institutions surveyed.

INSTITUTIONS INCLUDED

CATEGORY I

ARIZONA
- Arizona State University
- University of Arizona

COLORADO
- Colorado State University

IDAHO
- Idaho State University
- University of Idaho

MONTANA
- Montana State University
- University of Montana

NEW MEXICO
- New Mexico State University
- University of New Mexico

UTAH
- Brigham Young University
- University of Utah
- Utah State University

CATEGORY II A

ARIZONA
- Northern Arizona University

IDAHO
- Boise State University

MONTANA
- Eastern Montana College

NEVADA
- University of Nevada, Las Vegas
- University of Nevada, Reno

NEW MEXICO
- Eastern New Mexico State University

CATEGORY II B

IDAHO
- Lewis Clark State College

UTAH
- Southern Utah State College

CATEGORY III

MONTANA
- Flathead Valley Community College

CATEGORY IV

COLORADO
- Mesa College

IDAHO
- Ricks College

WYOMING
- Casper College

TABLE I

STUDENT CREDIT HOURS PER FULL-TIME
EQUIVALENT FACULTY BY DISCIPLINE
ROCKY MOUNTAIN REGION

HEGIS Code	Name	Mean -1SD	Mean	Mean +1SD	Standard Deviation	No. Of Entries
0100	Agriculture	157	229	301	71.9	16
0200	Architecture	205	244	283	39.3	8
0300	Area Studies	112	194	276	82.1	5
0400	Biology	186	275	365	89.5	23
0500	Business	320	377	434	57.3	23
0600	Communications	175	269	363	94.0	18
0700	Computer Sci.	263	361	459	97.7	14
0801	Education	163	223	283	60.2	20
0835	Physical Ed.	185	263	341	78.4	21
0900	Engineering	118	213	308	95.2	20
1001	Fine Arts	74	324	574	250.0	5
1002	Art	178	238	298	60.4	19
1005	Music	117	166	117	49.3	19
1007	Drama	133	226	319	92.6	15
1100	Foreign Lang.	153	223	293	70.2	23
1200	Health Prof.	88	148	209	60.7	14
1203	Nursing	71	95	119	24.0	13
1205	Dental Spec.	---------- SMALL		SAMPLE	SIZE ----------	3
1211	Pharmacy	---------- SMALL		SAMPLE	SIZE ----------	4
1219	Vet. Medicine	---------- SMALL		SAMPLE	SIZE ----------	1
1301	Home Economics	178	266	354	88.4	20
1401	Law	227	295	363	67.8	7
1500	Letters	194	271	348	77.4	13
1501	English	206	269	332	62.7	18
1506	Speech	146	273	401	127.5	8
1603	Library Sci.	160	196	232	35.6	6
1701	Mathematics	290	382	475	92.5	22
1801	Military Sci.	---------- SMALL		SAMPLE	SIZE ----------	2
1901	Physical Sci.	146	273	400	127.1	8
1902	Physics	126	248	370	122.4	19
1905	Chemistry	164	289	414	124.9	19
1914	Geology/Earth	175	272	369	96.9	19
2001	Psychology	276	397	518	120.8	23
2100	Public Affairs	193	261	329	68.0	13
2200	Social Science	250	329	408	79.2	22
2300	Theology	---------- SMALL		SAMPLE	SIZE ----------	3
4901	Interdis. Stds.	163	260	359	96.8	10

TABLE II

STUDENT CREDIT HOURS PER FULL-TIME
EQUIVALENT FACULTY BY DISCIPLINE
ROCKY MOUNTAIN REGION

CATEGORY I

HEGIS Code	Name	Mean -1SD	Mean	Mean +1SD	Standard Deviation	No. Of Entries
0100	Agriculture	210	272	335	62.5	9
0200	Architecture	205	244	283	39.3	8
0300	Area Studies	122	209	296	86.9	4
0400	Biology	183	257	331	73.6	12
0500	Business	321	371	321	49.8	11
0600	Communications	202	286	370	83.6	12
0700	Computer Sci.	286	379	472	92.9	9
0801	Education	170	215	260	45.0	12
0835	Physical Ed.	223	302	381	78.6	11
0900	Engineering	170	212	254	42.4	11
1001	Fine Arts	---------- SMALL		SAMPLE	SIZE ----------	3
1002	Art	232	260	289	28.5	10
1005	Music	109	170	231	60.7	10
1007	Drama	132	236	341	104.5	9
1100	Foreign Lang.	182	219	257	37.5	12
1200	Health Prof.	93	137	181	43.7	10
1203	Nursing	94	109	124	15.2	7
1205	Dental Spec.	---------- SMALL		SAMPLE	SIZE ----------	2
1207	Medical Spec.	---------- SMALL		SAMPLE	SIZE ----------	0
1211	Pharmacy	195	212	229	17.4	4
1219	Vet. Medicine	---------- SMALL		SAMPLE	SIZE ----------	1
1301	Home Economics	183	279	375	96.1	12
1401	Law	227	293	363	67.8	7
1500	Letters	186	278	372	91.9	7
1501	English	217	259	301	42.2	10
1506	Speech	175	315	452	140.5	5
1600	Library Sci.	---------- SMALL		SAMPLE	SIZE ----------	3
1700	Mathematics	320	419	518	99.4	12
1800	Military Sci.	---------- SMALL		SAMPLE	SIZE ----------	0
1901	Physical Sci.	147	236	325	89.4	4
1902	Physics	193	280	367	87.0	10
1905	Chemistry	176	331	487	155.5	10
1914	Geology/Earth	186	299	412	112.7	9
2000	Psychology	298	394	490	95.9	12
2100	Public Affairs	172	240	308	67.7	7
2200	Social Science	280	347	415	67.5	12
2300	Theology	---------- SMALL		SAMPLE	SIZE ----------	2
4900	Interdis. Stds.	184	217	250	33.4	6

STUDENT CREDIT HOURS PER FULL TIME EQUIVALENT FACULTY MEMBERS BY DISCIPLINE DATA REPRESENTING A SET OF ROCKY MOUNTAIN INSTITUTIONS

J. Stanley Laughlin, Director
Office of Institutional Research
Idaho State University
Pocatello, Idaho
(208) 236-3193

INTRODUCTION

Identification of proper departmental loading within American higher education has come into a more sharp focus as resources become more limited. Management personnel within higher education have observed and discussed numerous variables to be considered in defining a proper departmental load. Vast amount of discussion has also centered around the notion of deciding which variables to utilize when dealing with loads. Contact hours, credit hours, student credit hours, degrees awarded, and faculty student ratios are but a few considered when estimating loads.

Others become heavily involved in the analyses of hourly distribution of time between instruction, research, scholarly endeavors, etc. They begin to give points, hours or some measurement equivalents to sets of activities. And of course, there is the strong voice (usually from faculty) that infer that higher education should not, in any way, be subjected to such developments as a faculty loading criteria.

Research on the subject of faculty load indicates that no one measure can fully explain faculty productivity. Yet, in relation to departmental productivity people within higher administration must make decisions about such when requests for more faculty are made.

Someone, usually the Vice-President for Academic Affairs, must make a decision. Somewhere within the institution a decision will be made about relinquish or approval of new faculty members.

This then, is the dilemma. Often a decision about a departmental faculty load must be made. Yet, there is no agreement as to how this is to be accomplished. And, many fear any formula or calculation of a numerical method, although others wish for more than rhetoric.

Even though no one measure does cover all aspects of faculty load, one more accepted measure employed has been the utilization of student credit hours per full time equivalent faculty members.

This is a better measure than student faculty ratios because it eliminates one more mathematical adjustment, that of converting student credit hours to student full time equivalents.

Research does relate that the subject matter does effect faculty workloads. Therefore, one needs measures for various disciplines.

This set of data is an attempt to survey from a set of Rocky Mountain institutions those SCH/FFTE ratios, determine a mean and an interval estimate for various disciplines. The interval estimates have been derived by using a standard deviation above and below the mean. This information should provide administrators with a ratio and an interval estimate to study ones own institution.

This data is for fall, 1978 data and no attempt has been made to obtain data by level of instruction.

RESEARCH ON DEPARTMENTAL LOADING

What inferences can be drawn from the literature regarding departmental loading that might be utilized in management of higher education?

The research for faculty load describes a vast area of suggestions on how to evaluate such. The arguments about which variables should be utilized and what should be evaluated have not abated. There is a vast amount of research available.

Measuring faculty productivity is an extremely hard task. No one measure employed has been totally satisfactory to fully display what activities a faculty member participates in any one semester or year. Certain practices employed by faculties have no real research base. Many practices have been an outgrowth of history or opinions.

Perhaps one of the better reviews of the faculty load research has been done by Yuker (4) in his paperback published by the American Association for Higher Education and the ERIC Clearinghouse or Higher Education, entitled, Faculty Workload: Facts, Myths, and Commentary. He points out the myths surrounding faculty work loads, as well as the various variables effecting faculty load. Perhaps the one main point that can be gleaned from Yuker's work is that a variety of methods dealing with faculty work load have been created, and no specific one method has obtained a consensus.

From the overview in Yuker's book, he expresses:

> Studies of faculty work load have been conducted for over 50 years. Data obtained in these studies have been used to measure academic efficiency and to determine academic policy. Yet, questions and problems have persisted despite the large number of such studies. One of the most basic questions centers around the definition of faculty work load.

Yuker points out the research relative to various factors which may effect faculty loads. The variables which Yuker addresses which the research does not show as making a difference in faculty load are class size, level of course, mode of presentation, and repeated sections as being a lighter load. The research simply does not substantiate that these factors effect faculty load.

The one variable which Yuker's research does point out that may effect faculty load is definitely subject matter. Different subjects do require different loads.

To quote Yuker, we find:

> Thus, subject matter has been demonstrated to be an important influence on teaching load. But unlike course level, whose influence has not been demonstrated, this influence is not considered in setting institutional policy. (4, p. 37)

Dressel and Simon (2, p. 22) and Nichols (3, p. 367) are two separate authors which have suggested the use of the student credit hour per full time faculty member (SCH/FFTE) as a productivity ratio. Dressel and Simon are suggesting its use for budgeting, and Nichols is suggesting the ratio to be used in staffing.

Coleman and Bolte (1) utilized the SCH/FFTE ratio in a project in Florida. They expressed their results at the 1976 Association For Institutional Research. In the publication proceedings they expressed a methodology for deriving these ratios for each discipline. Their model included the use of a consensus of average class size by each discipline. Then productivity measures were derived.

SUGGESTED PROCEDURES

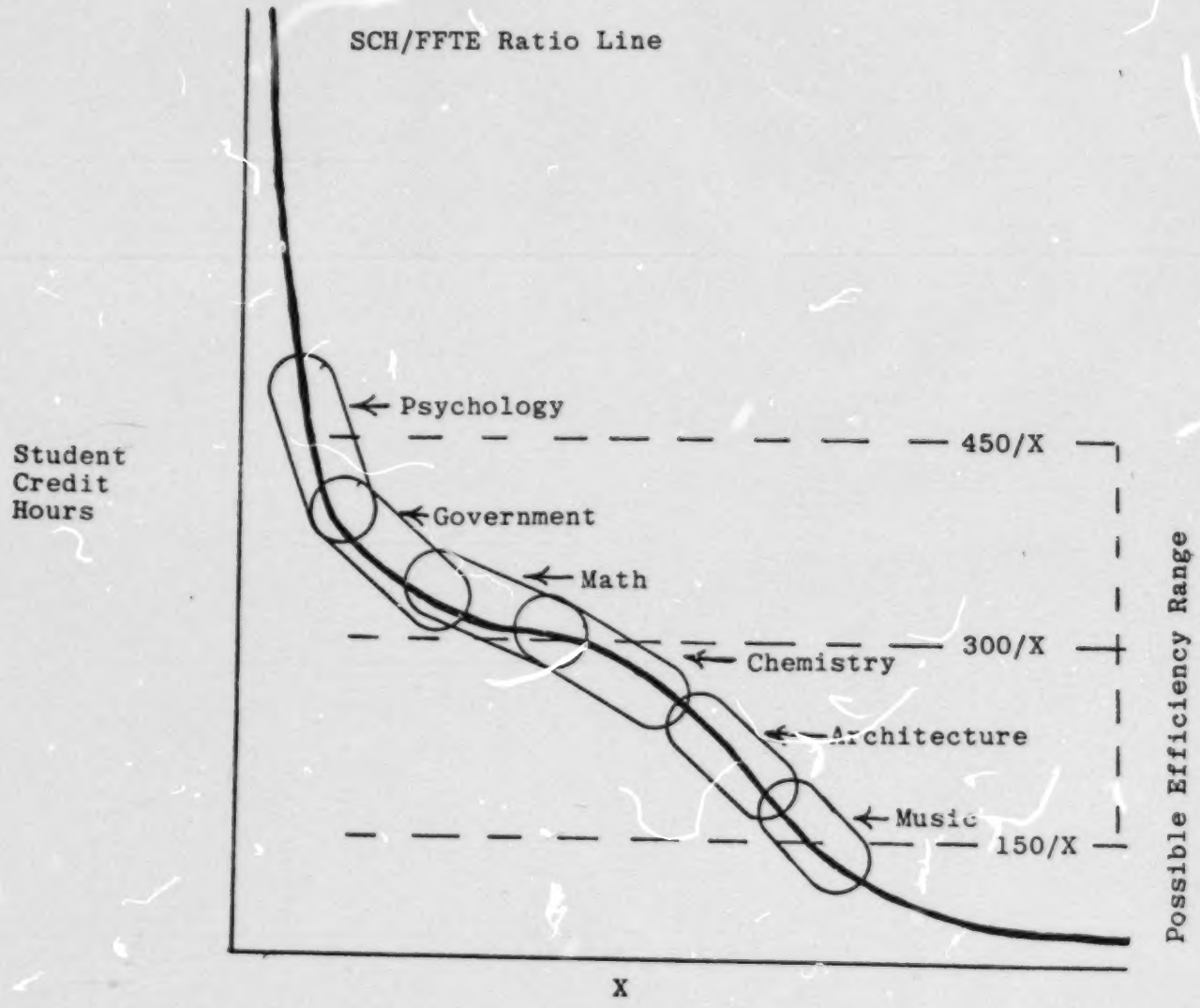
As suggested in the research on departmental loads, there are a variety of ideas and a variety of pros and cons given about any specific method. It appears that the time has come to move ahead and create a method, even though it may not satisfy all criteria desired by all factors.

The research points out that the variable which appears to effect loads of faculty is the subject discipline. With that research in mind, this paper devotes its method of determining a ratio for each discipline differently.

Some researchers have suggested the ratio of student credit hours per full time faculty (SCH/FFTE) member as a ratio that has utility for evaluation of the department level. Other researchers say this ratio does not account for research or other activities that a faculty member does. This author attempts to develop an interval around a mean to use the SCH/FFTE. This interval allows the management to work out the ratio desired with departmental personnel, thereby conceptualizing differences due to such factors as the amount of research or other activities one is expected to perform.

SCHEME I

EFFICIENCY CURVE AND RANGE
OF STUDENT CREDIT HOURS
PER FULL TIME EQUIVALENT FACULTY



First of all, certain thoughts need to be developed to understand the procedure described herein. One thought is that the department chairperson should have as much flexibility as possible in dealing with the loads of faculty. Secondly, the departmental load notion does not have to be the same development as in individual faculty evaluation system. In fact it is better to keep the two systems separate. One is a management tool (departmental loads) and the other is a reward system.

Attempting to evaluate all the different methods of teaching and the variations between what is perceived as instruction research and teaching, seems to be a system that becomes bogged down with rhetoric. Past experience has shown that this detail becomes cumbersome and difficult to coordinate and monitor.

STUDENT CREDIT HOURS / FACULTY F.T.E. (SCH/FFTE)

Therefore, the procedure suggested herein is to develop for each discipline a student credit hour per full time faculty member ratio. Furthermore, develop a low point, an average point and a high point for each ratio by discipline. Then the department would expect to work within this interval.

Scheme I illustrates how the various intervals might be created. It appears important that the interval for each discipline be identified. For example, music might be something like:

150	175	200
Low	Average	High

Then the department chairperson, with the dean and/or the acdemic person responsible for the academic program (Academic V. P. or Dean of Instruction), should decide what ratio should be sought. If a department is heavy on graduate work, perhaps the low area of 150 might be the ratio. If the music program is a heavy large class with student involvement, then the larger ratio might be more appropriate.

Each interval ratio may be different for each discipline. Psychology traditionally has been larger. Its interval might be something like:

400	475	500
Low	Average	High

When a department begins to fall outside of the identified range, discussion should occur as to why this has taken effect. Perhaps a decision then needs to be made.

IDENTIFYING THE RANGE

Now how does one identify such an interval?

One method this writer has developed is to do a survey of such ratios using various sample institutions. Table I illustrates a high, average and low SCH/FFTE of a set of

institutions within the Rocky Mountains. The high and lows were calculated by simply using the one standard deviation above and below the mean as those high and lows.

THE FACULTY F.T.E.

Considerable discussion often centers about how the faculty F.T.E. will be computed at a specific institution and comparable institutions. Attempts should be made to make sure similar data is gained. Attempts should also be made to check how much variation would be made in a difference in F.T.E. computations. Most differences will make little change in the ratios. This author's experience has been that counting graduate teaching assistants as 0.25 or 0.33 really make small differences in the SCH/FFTE. Obtaining comparable Faculty F.T.E. is not a problem that can not be overcome and one should not let it become a big issue. Usually the budget document requires some development of Faculty F.T.E. attempt to obtain comparable figures, but the differences usually make little impact on the SCH/FFTE ratios. Discussion on this topic is usually nothing more than a diversionary tactic.

CONCLUSIONS

The research regarding faculty loads is one of conveying a vast variety of thoughts. The discussion has not abated. There are those who wish no evaluation of load be obtained, and there are those who imply that a certain measure must be utilized. There are others who become very detailed in their development of loads at the individual level, establishing ratios and hours for each instructional activity.

This paper attempted to deal with one variable to utilize for a variety of reasons. The ratio chosen was the student credit hour per full time faculty ratio by discipline because subject matter appears to be the one variable research describes as effecting faculty load. Few researchers have drawn together the data by discipline level. Most data has been captured at the institutional level. This paper also attempted to convey that an interval should be built for comparison for each discipline. This allows the department chairperson some flexibility in programming.

The interval concept was developed by taking a sample of data, finding the mean and establishing the interval as the distance between the mean minus one.

This author surveyed a set of institutions in the Rocky Mountains to develop some notion of SCH/FFTE by discipline. It is the first attempt and in no way establishes a "norm". As far as is known, this data does not exist on a so called national level. Sampling of other institutions based upon a good experimental design might bring this more into focus.

It is conjectured that development of these two kinds of samples might help in decision mkaing regarding the faculty loads of departments. When a department chairperson seeks from a dean, vice president, or whomever, for additional positions, a decision must be made. It is hoped that with such data as suggested herein that those decisions might be more fruitful. By comparing the local ratio to the other sample at the descipline level, departmental planning might be enhanced.

SELECTED REFERENCES

1. Coleman, D. R., and J. R. Bolte. "A Theoretical Approach For Internal Allocation of Academic Personnel Resources." In Conflicting Pressures In Post-Secondary Education. Edited by Robert H. Fenske. Publication of the 1976 Annual Forum by The Association For Institutional Research, 1977, pages 193 - 198.

2. Dressel, Paul, and Lou Anna Kimsey Simon. "Allocating Resources Among Departments." New Directions For Institutional Research, (Autumn, 1976).

3. Nichols, Jim. "Strategies for Acceptance and Utilization of Simulation Modeling as a Mechanism for Facilitating Staffing Reductions: A Case Study." 15th Annual Forum, Proceedings of the Associations for Institutional Research, 1975, pages 365 - 370.

4. Yuker, Harold E. Faculty Workload : Facts, Myths, and Commentary. Washington, D. C. : American Association for Higher Education, ERIC/Higher Education Research. Report Number 6, 1974.